Cultivating the Surface Soil to Renovate a Grama Rhodes (Chloris gayana K. cv. Callide) Pasture in Northwest Argentine (NOA). 3. Effect of Interval of Implements Applied

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Cultivating the surface soil to renovate a Grama Rhodes (Chloris gayana K . cv . Callide) pasture in northwest Argentine (NOA) .3 . effect of interval of implements applied

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Key words : Grama Rhodes ,interval of renovation ,forage production ,weeds ,northwest Argentine region .

Introduction Grama Rhodes is a tropical pasture employed in several regions of NOA . The deterioration of grass pasture are associated to reduced availability of nitrogen in the soil under permanent stands of grass (Myers et al ,1991) . Cultivation can stimulate the production of nitrogen compounds which are available to plant roots but in long term increase tillage diminished the capacity of soil to immobilize and conserve mineral nitrogen . Are unknown ,in our region ,the effect of interval implements applied on pasture and weed production ,information reported here .

Material and methods At Cerrillos ,Salta (24°54′S ; 65°29′W ; 1250 m .) ,Argentina ,on a grama Rhodes pasture seeding in 1994 was carried out a trial in November 2000 ,which was related in previous paper (Berti ,2008a) .

Three interval of cultivation ,(0) Control ,no cultivation ; (1) Annual ,and (2) Biannual ,were applied . Cultivation was applied when the soil was wet (>4 cm of water plate) to depth of cultivation after fertilization . Plots arranged on split-split plot design ,with three replications were used . Seven harvest of plant material were taken between Nov .2000 and March 2005 . Nitrogen and Dry Matter in aerial biomass of grama was analyzed (A .O .A .C . ,1980) . N-NO_3 into soil , at end of trial was determined .

Results and discussion Not was found differences significantly between intervals of applied implements in total yields of aerial biomass of grama or weeds (Table 1) . Between implements used and interval of applied did not find significantly interaction . The higher content of N-NO_3 in annual or biannual interval was found ,but it wasn t associate with significantly promotion in grama yield or total Nitrogen . The increase of nitrates content in soil ,probably owing to soil tillage ,may be higher in biannual interval due to less leakage of nitrates for lixiviation in rainy years .

Table 1 . *Effect of interval of implements applied on the total yields of grama ,weeds and N-Nitrate in soil .*

Interval of implements applied ,years	Grama (D .M .kg ha)$^{-1}$	Grama (N . ,kg ha^{-1})	Weeds (D .M . ,kg ha^{-1})	Soil (N-NO_3 , ppm)
0 ,Control	17276a	180a	292a	11 .3a
1	16658a	192a	561a	14 .6b
2	18269a	197a	496a	16 .2c
MSE^z	2633 .5	36 .2	548	3 .9

a ,b ,c : Values on the same column with different letters are different ,P<0 .05 .Duncan Test .
z : Standard error of the mean .

Conclusions The intervals of implements applied had not effect on total yield of aerial biomass in grama or weeds or in N total in grama . Can conclude that ,in our condition ,the better economically method of improve production of grama is the application annually of urea at broadcasting on surface .

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